Paracricotopus mozleyi n. sp. from Georgia, U.S.A. (Diptera: Chironomidae)

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Abstract. — The adult male, pupa and larva of *Paracricotopus mozleyi* n. sp. were collected from a vertical rock seep in Lumpkin County, GA. All stages are described and illustrated and characters are given to distinguish the life stages of this species from the other species of the genus. This is the second species of *Paracricotopus* to be described from North America.

Saether (1980) described *Paracricotopus glaber* and revised the genus which contained two other species, the palearctic *P. niger* Kieffer and *P. uliginosis* Brundin. He placed *Paracricotopus* Thienemann and Harnisch into a group with *Nanocladius* Kieffer, *Mesocricotopus* Brundin, *Psectrocladius* Kieffer, and *Rheocricotopus* Thienemann and Harnisch. Saether's new species, *P. glaber* was described from three associated specimens collected from a seepage area on a mountainside outcrop in Oconee County, South Carolina. Recently, I collected specimens of a new, species, *P. mozleyi,* from a similar rocky seepage area in Lumpkin County, Georgia. The adult male, pupa and the larva of *P. mozleyi* are described here following the morphological terminology of Saether (1980a). The measurements are in microns and are expressed as means or ranges.

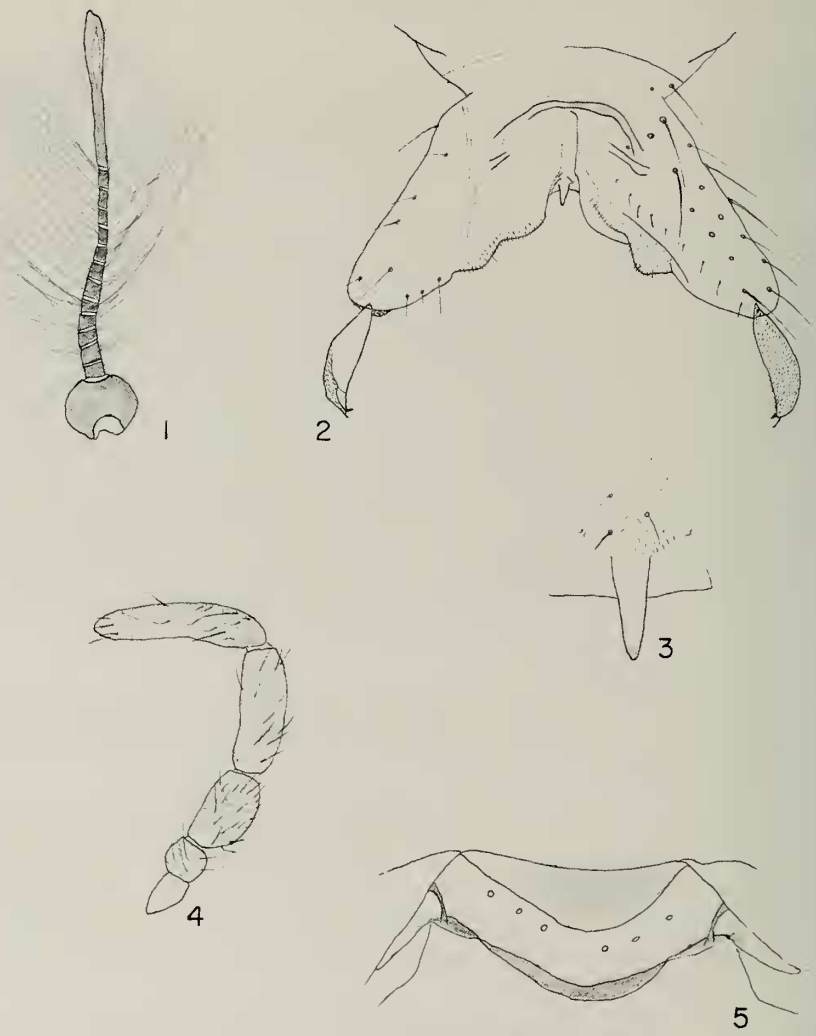
Paracricotopus mozleyi n. sp.

Type locality: Vertical rock seep 4.2 km northeast of Stonepile Gap crossroads on north side of State Route 60, Lumpkin County, Georgia. Elevation: 781 m.

Type Material: Holotype: pharate male and pupal skin (recovered from salamander gut). *Paratypes:* reared pharate male with cast pupal and larval skins, 1 pupal skin, 1 partial pupal skin, 2 4th instar larvae, 1 4th instar larval head (recovered from salamander gut), 1 3rd instar larva. All specimens collected by John W. Steiner, 26 X. 81. All in coll. U.S. Nat. Mus.

Diagnosis: The life stages of *P. mozleyi* n. sp. can be distinguished from

those of *P. glaber* and *P. niger* by these combinations of characters: *Adult male:* anal point proper without setae but with 3-4 setae at base; squama with 3-4 setae; inferior volsella apparently weak; last three palpal segments as 62:80:100. *Pupa:* tergites VII-IX with anterior shagreen; largest precorneal seta longer than thoracic horn. *Larva:* last three antennal segments subequal; Lauterborn organs longer than segment III.



FIGS. 1-5. *Paracricotopus mozleyi* n. sp. *Male* — 1. Antenna. — 2. Hypopygium (right, ventral view; left, dorsal view). — 3. Anal point. — 4. Palpus. — 5. Scutellum.

Etymology: This species is named in honor of Dr. Sam Mozley of North Carolina State University.

MALE (n = 2: both pharate)
Dark olive-brown body with red eyes. Total length about 3200.

Head: eyes hairy, diameter of largest facet 10. Palpal segments (Fig. 4) in the ratio: 27:25:60:80:100. Outer vertical setae 2. Antenna (Fig. 1.) with 13 flagellomeres in the ratio: 33:23:20:20:27:27:30:30:28:27:26:26:268; AR: 0:84.

Thorax: scutellum (Fig. 5) with six strong setae. Dorsocentral setae 6-9; prealars 3. Haltere dark.

Wing: Squama with 3-4 setae.

Hypopygium: anal point proper (Fig. 3) very small and without setae, length 8-11, base with 3-4 setae. Gonocoxite length 175, gonostylus (Fig. 2) length 83. Laterosternite 1X with 2-3 setae. HR: 1.92-2.14.

PUPA (n = 4)
Light Brown with darker spines. Total length 3070.

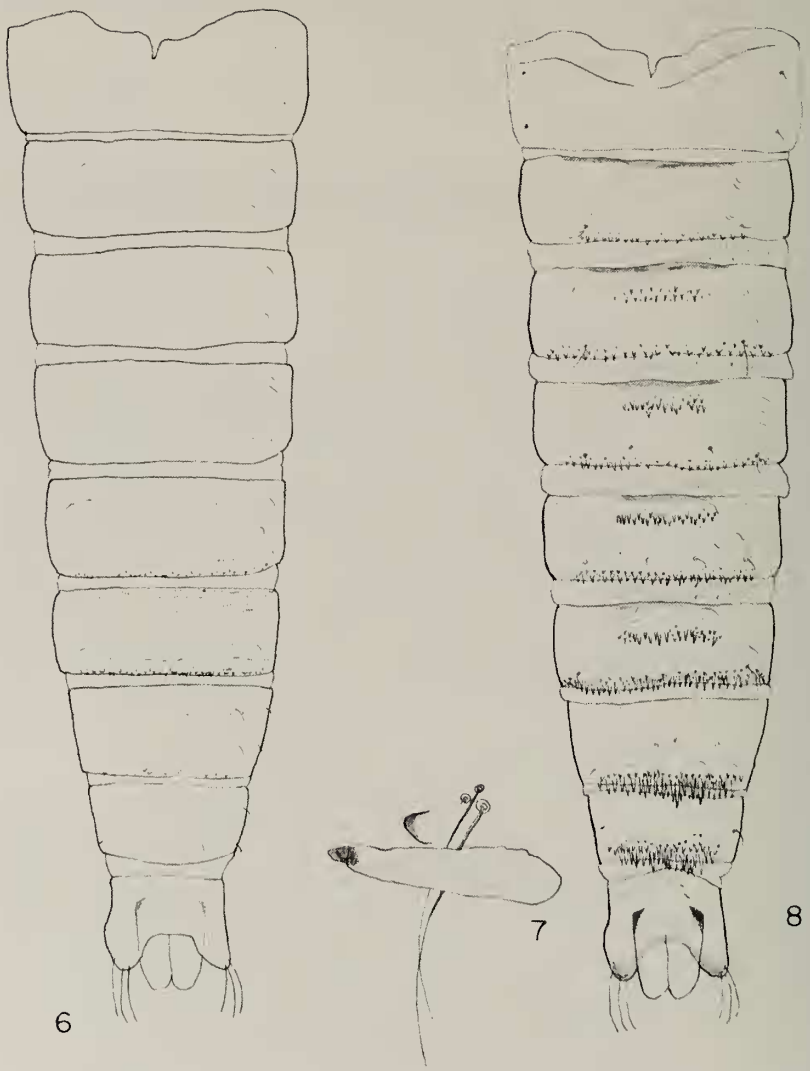
Cephalothorax: length 1270. Thoracic horn (Fig. 7) entirely smooth or with two shallow lateral notches, length 95. Anterior precorneal seta length 125; median precorneal seta length 105. Median anteprontal setae 2, length of each about 90. Dorsum of cephalothorax weakly reticulate. Dorsocentral setae 4, distance between 1st and 2nd 50. Wing sheaths smooth.

Abdomen: length 1800. Anterior shagreen on tergites VII-1X (Fig. 8). Median or posterior shagreen on sternites II-VIII. Numbers of large (8+) spines in median transverse rows on T III-VII as 8-20, 20-24, 20-29, 18-26, 0-3; numbers of small (8−) spines in same rows as 6-10, 9-13, 5-11, 7-8, 0-2. Numbers of large caudal spines on T II-VIII as 18-26, 30-34, 28-34, 34-37, 46-53, 45-52, 44-50. Numbers of small caudal spines on T II-VIII as 18-26, 22-26, 27-41, 34-38, 31-40, 35-38, 18-20. Sternites V-VII (Fig. 6) each with an irregular row of short caudal spines. Pedes spurii A only on S VI, perhaps present on S VII as 1-2 minute spinules. Conjunctives II/III through V/VI each with 3-5 rows of thin spinules. Anal lobe without fringe. Apical spines absent. Anal macrosetae subequal, length 85-95.

LARVA — 4th INSTAR (n = 4)
Tan body with golden brown head capsule. Total length about 4050.

Head: length about 400, width about 280. Mouthparts and occipital margin dark brown. Mentum with 11 teeth (Figs. 13, 17). Median tooth pointed with 1st laterals adpressed; last lateral teeth reduced, mentum width: 85. Ventromental plate crescent shaped, thin, curving to base of mentum. Mandible (Fig. 12) sharply curved with three inner teeth; seta subdentalis short, truncate; seta interna with six or seven thin, regular, apically serrate filaments; mandible length 111. Epipharynx with SI (Fig. 14) apically bifid, SII simple; pecten epipharyngis with three blunt teeth, basal sclerite about as long as ungula. Premandible (Fig. 15) simple with mesal lobe; premandibular brush produced into a single large serrate seta; premandible length: 67. Maxilla (Fig. 11) with large palp and 6-7 smooth lacinial chaetae. Antenna (Fig. 10) 5-segmented with ring organ at base of segment I; blade with sclerotized base, length: 32; length of segments: 51:19:6:5:4; Lauterborn organs paired at of apex of II, length: 7; Segment I with two long basal lateral setae and mounted on short, sclerotized, spurred tubercle; AR: 1.48.

Body: length about 3600. Anal tubules (Fig. 16) much longer than posterior parapods. Procerci sclerotized and dark with large mesal spurs, each with five long (500) dark anal setae and two small lateral setae. Supraanal setae reduced. Posterior parapods each with 16 strong yellow claws. Long claws of anterior parapods serrate.



FIGS. 6-8. *Paracricotopus mozleyi* n. sp. *Pupa* — 6. Sternites. — 7. Thoracic horn and precorneal setae. — 8. Tergites.

LARVA — 3rd INSTAR (n = 1)
As in the 4th instar but smaller with much darker head capsule. Total length about 1800. Median tooth of mentum relatively smaller. Length of antennal segments (Fig. 9) as 32:14:5:4:3.

Ecology: The specimens were all collected from a roadside vertical seep in the mountains of North Georgia. The open face of the outcrop faces southwest. Although samples were taken from all wet areas of the seep, live specimens were found only in colonies of the fragrant liverwort, *Conocephalum conicum.* Three species of plethodontid salamanders were present in large numbers in all damp areas of the outcrop. *Eurycea bislineata,* the southern two-lined salamander, inhabited the edges of the damp areas where rotten logs and sticks provided cover. *Desmognathus fuscus,* the dusky salamander, and *Desmognathus quadrimaculata,* the black-bellied salamander were actively crawling about and feeding in all wet areas. These last two species have enlarged hind legs and are often referred to as jumping salamanders because they are adept at leaping after low-flying insects. Several were observed as they captured adult chironomids. I collected two individuals of each species and examined their gut contents. The type specimen of *P. mozleyi* n. sp. was found in the foregut of a small dusky salamander along with adult tipulids and other larval chironomids. Most of a larval head was recovered from the gut of a small black-bellied salamander.

Larvae of *Hudsonimyia karelena* Roback were found in the company of *Paracricotopus mozleyi* n. sp. as were larvae of the genera *Tanytarsus, Corynoneura* and *Parametriocnemus.* The type specimens of *H. karelena* were found with the type specimens of *Paracricotopus glaber* in South Carolina (Roback 1979). The type localities of *P. mozleyi* n. sp. and *P. glaber* are about 100 km apart. Larvae of *P. mozleyi* n. sp. construct irregular trashy tubes. Their diet consists of diatoms, filamentous algae and detritus.

Distribution: Known only from the type locality.

Remarks: None of the life stages of either *P. glaber* or *P. mozleyi* will key readily in any published taxonomic reference. Because seeps occur in many scattered locations within the Appalachian Mountains, it is likely that other species of this genus remain undiscovered. To date, a total of eleven (three of *P. glaber* and eight of *P. mozleyi*) specimens of the genus *Paracricotopus* have been collected in North America.

Although the diagnostic characters presented here will separate the two species, if more specimens are ever collected, it might be determined that *P. mozleyi* is subspecific to *P. glaber.*

Acknowledgments

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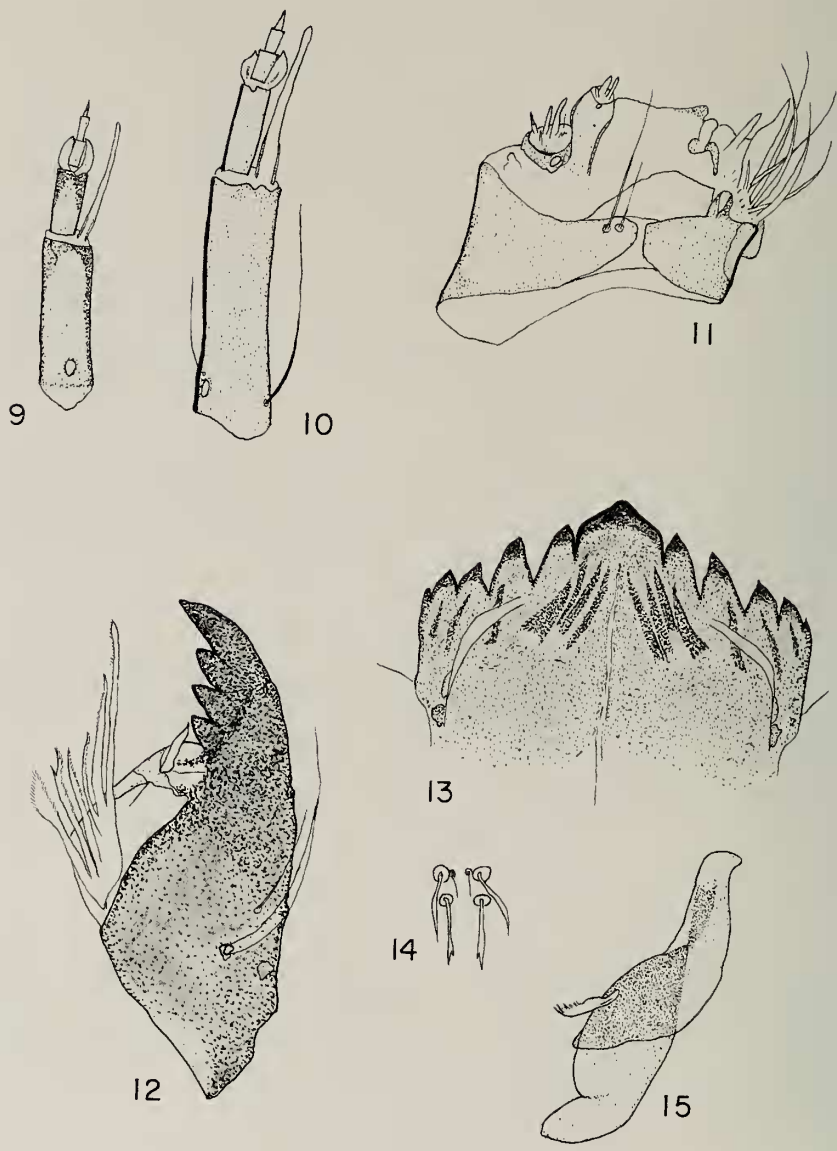
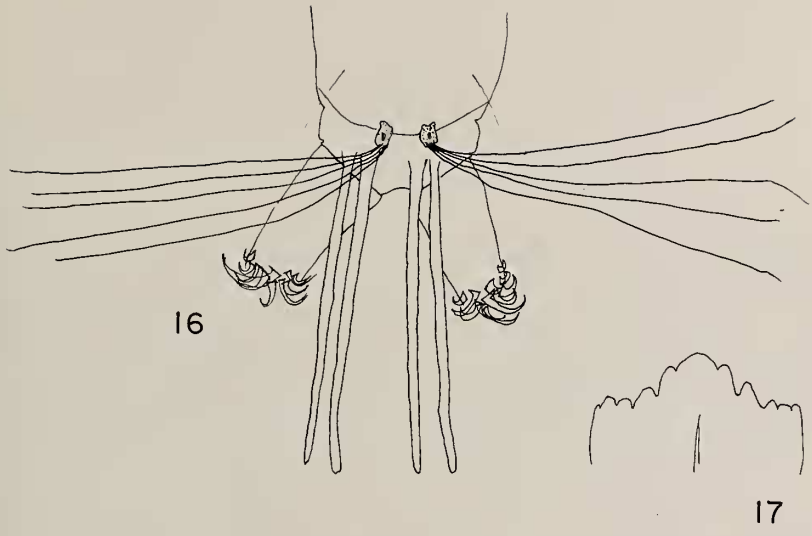
Roback, S.S. 1979. *Hudsonimyia karelena.* A new genus and species of Tanypodinae, Pentaneurini. Proc. Acad. Nat. Sci. Philadelphia 131:1-8.



FIGS. 9-15. *Paracricotopus mozleyi* n. sp. *Larva* — 9. Antenna (3rd instar). — 10. Antenna. — 11. Maxilla. — 12. Mandible — 13. Mentum (new molt). — 14. Labral setae. — 15. Premandible.



FIGS. 16-17. *Paracricotopus mozleyi* n. sp. *Larva* — 16. Posterior part of abdomen. — 17. Mentum showing normal wear.

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